Jules Verne and Beyond

Verne27 by Frank Wu (www.frankwu.com)

JULES VERNE AND BEYOND
Loren Means

This issue of the YLEM Journal features an article on Jules Verne and interviews with two stars in the science fiction firmament.

Frank Wu, who graciously created our cover image, is a three-time Hugo Award-winning science-fiction artist and writer. "Jules Verne was a huge influence on me when I was growing up," Wu noted. "*Mysterious Island* was the first book I ever read, and I sometimes when I paint, I still play Bernard Herrmann's soundtrack for *Journey to the Center of the Earth*. The chance to paint my version of the Nautilus for YLEM makes my life complete." His website is frankwu.com.

Ryder W. Miller is the editor of *From Narnia to a Space Odyssey: the War of Ideas Between Arthur C. Clarke and C. S. Lewis*. He has been published in *The Internet Review of Science Fiction, Rain Taxi*, and *The Bloomsbury Review*, writing articles on Mars and space exploration, Ray Bradbury and Philip K. Dick. Ryder and I are both members in good standing of the Borderlands Bookstore Science Fiction Book Group.

Elizabeth Bear was the winner of the 2005 John W. Campbell Award for Best New Writer. She is the author of the 2005 hard science fiction trilogy featuring the cyborg Jenny Casey: *Hammered, Scardown*, and *Worldwired*, which won the Locus Award for First Novel in 2006, as well as the hard science fiction novels *Carnival* (2006) and *Undertow* (2007). She also writes fantasy, including many of the stories in her collection *The Chains that You Refuse* (2006), and novels including *Blood and Iron* (2006) and *Whiskey and Water* (2007). Bear is a full-time writer, and when I interviewed her at WorldCon 2006, I had to stand in a long line to get to her.

Bruce Balfour is the author of the hard science fiction novels *The Forge of Mars* (2002), *The Digital Dead* (2003), and *Prometheus Road* (2004). *The Forge of Mars* was a Locus best-seller. I interviewed Balfour at a Yoga Studio he and his wife used to run in Novato, California, where they graciously let me curate an art show, and returned the art to me wrapped in yoga mats. Balfour works fulltime for the Lawrence Berkeley Laboratory, where he writes articles and proposals on microbiology and other hard science concepts.

I find both Bear's and Balfour's works to be totally absorbing page-turners, so it's a mystery to me why Bear is able to write full-time, while Balfour has to have a day job. There's some force operating here besides raw talent.

I asked Hong Kong University Press for a review copy of *World Weavers* because I had heard that Howard Hendrix had a piece in it, and I'm a fan of Howard's non-fiction, which I hope to soon see collected in an anthology of its own. When I got the book, I read its sub-head (is that what they call the longer, second part of a book's title?), *Globalization, Science Fiction, and the Cybernetic Revolution*. The book was edited by Wong Kin Yuen, Gary Westfahl, and Amy Kit-sze Chan, a cast of characters that would support the "Globalization" part of the title. Yuen and Chan are professors at Hong Kong Shue Yan College, while Westfahl is a Co-ordinator of English Programs at University of California Riverside. As the back copy states, "World Weavers is the first ever study on the relationship between globalization and science fiction." Such a study sets up an anticipation: that the relationship between globalization and science fiction is significant and pervasive will be illustrated with cogent examples and building logical arguments. Such a premise could probably be accomplished in a focused examination of historical and contemporary manifestations, but in an anthology such as this, with its contributors ranging from the US to Asia to Europe, exhibiting a heterogeneity of approaches and a scattershot choice of topics to focus on, cogency tends to be sacrificed to plurality. This would perhaps be more palatable if I picked up the book already convinced of the strong link between science fiction and globalization, but I tend to see science fiction as a manifestation principally of the English-speaking world. Some of my favorite science fiction has come from Eastern European and Russian sources, and I keep hearing how cyberpunk is being kept alive by the purveyors of manga in Japan, but the sad fact remains that the "science fiction" marketplace is dominated by English-language fantasy, squeezing hard science fiction off the shelves, and any science fiction not originating in English is doomed to marginalization, as all non-US cultural manifestations have to fight for life against the juggernaut of the American entertainment industry.

As Executive Editor of the YLEM Journal, I deal with artists from all over the world. Their input speaks to the existence of globalization in the visual arts, electronic arts, robotics, and electronic/computer music. But I looked all over for science fiction in France and couldn't find any. The books by Communist-sphere writers like Lem and the Strugatskys are mostly out of print in English, and I don't hear of young science fiction writers coming from those countries. And although Japan appears to have something of a science fiction hyperculture, I don't hear about science fiction from other Asian countries. Grania Davis is in the process of completing a project translating Japanese science fiction that was begun by Judith Merril, and writers like Daina Chaviano strive valiantly to get the work of Latin American science fiction writers translated. The translations don't take place because there is little market for English-speaking science fiction, let alone translated works. I was surprised, however, that nobody writing in the book mentioned not only Lem or the Strugatskys, but also my favorite Japanese science fiction writers, Kobo Abe and Haruki Murikami, were ignored.

Howard Hendrix' article is subtitled *A Prehistory of the Postmodern World City*. Hendrix talks about three stages of Urbanism: Early, Middle, and Late, comparing them respectively to the Agricultural Revolution, the Industrial Revolution, and our contemporary Information Revolution. Hendrix points out

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Bruce Beasley, eminent public sculptor, reviews his 45-year career and shows the recently-released movie about himself. His exploits are the stuff of legend, for he invented new tools and processes to realize his vision. His metal and stone sculptures give the sensation of movement and flight. In emotional terms, they embody the notion of breaking free. His earlier works were transparent, blurring the boundaries of just where their mass began and ended.

Who would have thought a guy involved in racing at Bonneville in 1957 would be destined for the fine arts? A dozen years later he was casting a 13,000 lb. acrylic sculpture in his Oakland studio, a feat Dupont said was impossible to do and still achieve transparency. His transparent sculptures had strange properties: Their surfaces acted like lenses, creating vivid distortions. They seemed to dissolve into their surroundings, giving them a weightlessness. Thus began his life-long mission as a sculptor, to break down the automatic association that we have between volume and our sensation of weight.

In 1974, he began doing monumental geometric metal sculptures. He says: "The major source materials for me are... basic forms of nature...crystalline structures, molecular building blocks and bones. I'm very interested in the way nature refines things down to very simple forms, and how it puts things together."

His next quest, to make metal sculptures that resembled intersecting cubes, involved some difficult fabrication problems. At his behest, a CAD computer program was modified for him that not only let him compose new forms, but produce cutting diagrams. These heavy sculptures gesture as if they were moving and taking off.

Beasley doesn't see a division between art and science. He says, "Sculptors are poets of shape. But we have to know a lot of what engineers know. We have to know how to make things, how much they weigh, how to keep them from falling over. We have to be comfortable with principles of physics and chemistry. We have to believe strongly enough in the shapes we make to learn how to make them so they'll last a long time."

His works are spread around the Bay Area, at the Oakland Museum, in front of Oakland City Hall, at San Francisco International Airport and Stanford University. They are seen in museums and public collections internationally, including the Museum of Modern Art, New York, the Solomon R. Guggenheim Museum, the Djerassi Foundation, and in the collection of Kleinewefers GmbH, Krefeld, Germany.

Jules Verne and Beyond, continued

that megacities throughout history have tended to resemble megacities in other parts of the world more than they resemble smaller settlements in their own territories. As he points out, science fiction is obsessed with urbanization, equating it with the future. However, in the science fiction novels he then explores, by Clarke, Simak, and LeGuin, a rural alternative is posited to the great cities that are depicted. As the essay winds down, Hendrix expresses a leaning away from urbanization toward small-scale communities. Then Hendrix gets downright polemical, taking swipes at Donna Haraway for her "cyborgean self-hatred" and desire to destroy individuation. More to the point is Hendrix' invocation of Gibson, who seems to me more and more to equate hipness with big bucks.

The second author I gravitated toward in this anthology is Takayuki Tatsumi. Tatsumi is ostensibly the perfect person for this anthology, since he as been writing for some time on both Japanese and American popular culture. His book from last year, *Full Metal Apache*, compares Japanese cultural manifestation with American science fiction and popular art. Tatsumi's essay in *World Weavers* is about Kubrick's *2001* movie. He opens the essay by saying that when the film opened in Japan, it was aimed at a general audience but failed, so then it was recommended to intellectuals, and triumphed at the box office. Tatsumi's rhetoric gets quite polemical early on in the essay, as he states that "The development of high technology has formed, and has been formed by, the science fictional imagination." Tatsumi then invokes film scholar Norman Kagan, who "suggests that *2001* can be interpreted primarily as a story of the passage from the discovery of technology to the discovery of a new form of being within oneself." From there Tatsumi invokes Shoshana Felman's theory of speech acts, where she states that "matter itself has ceased… to be a 'thing': matter itself is an event." Tatsumi says that Felman conflates Einstein's relativity of the 1910s with the radical relativism of the 1960s after the assassination of President Kennedy. And Tatsumi posits that Arthur C. Clarke, author of *2001*'s screenplay, represents Einsteinian physical relativism while Kubrick is in the camp of post-JFK-cultural relativism. Later, Tatsumi says that Clarke represents the science fiction of outer space, as espoused in the classic science fiction era as represented by John W. Campbell, Jr., while Kubrick represents the inner space of the New Wave of science fiction as represented in Michael Moorcock's New Worlds. Duality follows on the heels of duality.

Tatsumi then attempts to wed his analysis of *2001* to Asian thought by identifying the baroque room at the end of the film as a "memory palace," like those evoked by the Jesuit missionary Matteo Ricci, who "provided the sixteenth-century

WHERE ARE YOU GOING NEXT, JULES VERNE?
Ryder W. Miller

Having passed the centennial of his death in 2005, Jules Verne (1828-1905), unlike during his lifetime, has become the interest of literary scholars who seek to understand and acknowledge his accomplishments. Some consider him the most successful French author in the English language. Some publishers consider him the founder of science fiction (as stated on recent book covers), others like science fiction writer Gregory Benford would argue (and I concur), that Verne was the founder of modern "hard" science fiction (*Introduction to The Golden Meteor*). Such an assertion is a mediation between others who are more enamored of other "founders". Shelley and Poe, who preceded Verne, one could say wrote "fantastical" science fiction, as Verne only sometimes did. Though his writing was more staid, a lot of what Verne predicted has since come true. He foresaw air balloons, modern transportation, FAX machines, submarines, space travel, etc.

One can also read Verne's work because of a historical and geographical interest, i.e., what were those earthly places he visited in his tales like more than one hundred years ago? The same could not be said of the science fiction visits to the other planets of the solar system. Jules Verne, unlike H.G. Wells in some of his very famous novels, is known for having written things that came true a long time ago. We are still waiting for some of Wells's plots to become true, since he took more literary license in his novels than Verne. There have been no time machines, invisibility suits, extraterrestrial invasions, or alien societies on the moon yet. Wells wrote more militaristic, Darwinist, and exciting tales, but Verne was more prescient.

Verne, near the turn of the century, wrote of Wells and himself:

"I have always made a point in my romances of basing my so-called inventions upon a ground-work of actual fact, and of using in their construction methods and materials which are not entirely without pale of contemporary engineering skill and knowledge…

"Not only does he [Wells] evolve his constructions entirely from the realm of the imagination, but he also evolves the materials of which he builds them."

Verne, who was eventually supplanted by Wells—Twentieth Century science fiction begins with Wells for many—did appreciate Wells for his "imaginative genius."

Mostly famous for his dated extraordinary voyages, Verne also wrote lucid tales about the social consequences of the scientific endeavor and technological developments. There is a treasury of published works by Verne which the public does not easily have access to, Verne having written 100 novels, a number of stories, plays, and poems. But what was he writing? Verne became famous for what I am calling the "scientific novel," before the term science fiction was coined. Some may also call it old "speculative fiction" or "scientifiction." They were also different from Wells' "scientific romances." One can argue that it was science fiction lacking the elements of modern science fiction: technology still

not possible, star ships, alien societies, androids, etc… Science fiction usually had to have more action and fireworks. Modern science fiction writers were competing against many other science fiction writers more recently. Verne was more of an explorer than an adventurer and not a soldier, but the globe was still more of a mystery with secrets back in his time. All sorts of tales have been written about the Earth's exploration by Arthur Conan Doyle, H. Rider Haggard, etc., but Verne was famous for infusing his tales with scientific findings.

Jules Verne was born February 8th, 1828 in the seaside town of Nantes, France, and was enamored of the ocean his whole life. As one can gather from his oeuvre, Verne had the soul of an explorer. The son of a maritime lawyer, like his father he studied law, but his real interest lay in arts and literature. Verne moved to Paris for a time, idolized Victor Hugo, and was friends with the Dumases (*The Three Musketeers, The Man in the Iron Mask, Camille, The Count of Monte Cristo*). Early on Verne was unsuccessful in love, actually hurt by rejection, but eventually met Honorine, whom he said he was marrying for her money (Butcher, 2006). As Butcher recounts in his irreverent biography, Verne suffered from a facial tic and diarrhea, his wife Honorine having once said to him: "How can you write such fine things, my poor boy, when you only look at the sky with your arse." Such subject matter did not become part of his canon even though his characters spend a lot of time travelling, even sometimes in enclosed space ships. As Butcher (2006) describes, Verne had a busy life, travelling often, visiting with family often, writing, and studying. Verne, finding connections in Paris, went on to write poems and plays, and manage a theater. He eventually left Paris for less busy places where he had more time to write.

Early in his career he became fascinated with science and technological developments. Verne was in touch with scientists and followed scientific developments which helped give him the background to be an established "scientific novelist." One of his primary interests was geography. Unlike recent science fiction writers who read pulp magazines and fell in love with science fiction, Verne found in technology a means to travel and explore the globe. In the future world that was coming into being, one would no longer need to depend solely on boats and horses. Though he wrote the gloomy *Paris In the Twentieth Century* first, before the rest that made him famous, it was only published recently, posthumously, and with much fanfare. Verne made his literary debut in 1862 with *Five Weeks in a Balloon*, which was influenced by Poe's "The Balloon-Hoax." It was an immediate success. Here one found a revelatory journey over the mysterious continent of Africa by balloon. Verne found success in writing in this vein for the rest of his career.

He was signed on to write more extraordinary voyages for a younger audience, producing more than one a year until he died. Later in life his work became more social and satirical. Early on he took his readers on voyages to fascinating and far-off places. He was not famous for taking his readers too far away, let's say another inhabited planet or beyond the solar system. There were not the facts or science to base such a tale for a hard scientific writer like Verne.

Verne's scientific novels could also be designated as a science fic-

tion sub-genre: "new transportation science fiction". Verne's stories were not only voyages, they were "extraordinary" voyages which usually centered around upcoming technological developments. New transportation made it possible to visit the whole globe, something Verne was fascinated by because of his interest in geography. Verne wrote that we could also someday expect to visit the moon, and other worlds. Why shouldn't we use a cannon for a good reason as he describes in *From the Earth to the Moon* and *Around the Moon*? Modern space exploration "take-offs", which also originates from southern Florida, still look like explosions. Being able to go elsewhere in new ways opened up all sorts of possibilities for the teller of adventures. One also cannot easily surmise the debt that the whole science fiction field owes to Verne, who if writing in the late 20th Century may have also authored his galactic quests and treks. Verne instead became adept at writing about national character with all sorts of foreign individuals populating his books.

Verne's most successful novels would all be published in the twenty years following the novelistic debut of *Five Weeks in a Balloon* in 1862, *Journey to the Center of the Earth* (1864), *From the Earth to the Moon* (1864-1865), *Twenty Thousand Leagues under the Sea* (1866-69), *A Floating City* (1869), *Around the World in Eighty Days* (1872), *The Mysterious Island* (1873-74), *Hector Servadac or (Off to the Sun and Off on a Comet)* (1874-1876), and *The Beggum's Millions* (1878). Other notable books such as *Robur the Conqueror* (1886), *The Mighty Orinico* (1894), *For the Flag* (1894), *The Ice Sphinx* (1895), *Treetop Village* (1896), and *Master of the World* (1902-1903) were to come later. There have also been successful efforts underway to publish some of his works posthumously including the poetic *Paris the Twentieth Century* (1860-1863), *Magellania* (1896-1899) and *The Meteor Hunt* (1901). Many of the most famous of his works have since made it to the big screen.

What one finds in Verne's story is a clear trajectory in the plotting, which keeps the readers interested in the approaching destination. Most famous for his journeys, his "from here to theres", Verne later in his career also wrote novels which explored technological and scientific questions which kept one involved in the story line.

Though he wrote one hundred years ago, one can still find the scientific questions explored in Verne's work fresh and relevant. *Robur the Conqueror* (1886) and *Master of the World* (1902-1903) ask, what if someone invented a machine that could fly and become a tank and a submarine? Would this give him an unstoppable military advantage? What would this mean if we could not stop him? Robur kidnapped members of the Weldon Society. Darwinism and the search for the missing link are explored in *Treetop Village* (1896) about a journey through Africa, this time on foot. Technological developments pose a danger because they can also be used for warfare in *For the Flag* (1894).

Verne's first classic, *Journey to the Center of the Earth*, has more than half a dozen editions with different introductions by science fiction luminaries (other works of his have introductions by other science fiction luminaries as well), clearly indicating the impact he had on the genre. Though reflecting upon the Hollow Earth theories of Verne's time, *Journey to the Center of the Earth*, does not really represent Verne who succeeded in putting many

innovative discoveries in his work. Even though fantastical, it is Verne and fun nonetheless. Though being an easy tale to follow, ie., not too many characters and a clear plot trajectory, it is also a fascinating intellectual adventure where one can learn about the Earth's geology as the characters make their way "back" in time on their way to the center of the earth. Despite the work's charm, Verne is better remembered for his "new transportation" novels which show him being able to predict the inventions of the future.

Twenty Thousand Leagues under the Sea is still exciting enough for modern readers of science fiction, but *Around the World in Eighty Days* is more quintessentially Verne. Here one will find a voyage, satire, the depiction of national character, and geography, in a straightforward tale. The work focuses on the new exploration possibilities engendered by transportation innovations. Technology shrank the world, a point someone interested in geography like Verne would certainly want to point out.

But Verne, who wrote one hundred books, leaves behind a rich legacy of all sorts of tales for all sorts of readers.

One of Verne's most important accomplishments is that he spoke to the explorer in us. He helped us to acknowledge our curiosity about other places. Such voyages brought us knowledge which led to our personal development and the modern world. He also populated his tales with humorous characters from all over the world. He made the world smaller and accessible. Reading Verne was also a nice little escape from a dreary day.

Verne may not have "invented" science fiction, he had predecessors in the US as well in England: Edgar Allan Poe and Mary Shelley, who were also concerned with the potentials of technology, but Verne saw what good could come out of scientific developments. His works were not warnings about the future, but rather usually hopeful and enthusiastic. Technology usually gave us more freedoms, not always more worries. One could also learn about scientific advances from Verne.

But what should be make of Verne now, after Asimov, Heinlein, Tiptree, Feminism, the Millenium, etc…?

Verne was science fiction before there was science fiction with its modern expectations, ie., a writer of the scientific novel or speculative fiction. Darko Suvin wrote that science fiction was "cognitive estrangement" (Luckhurst, 2005), which could also be taken to mean fantasy, ie., something which did not fit with our knowledge of the world. There are plenty of fantasy and horror books in the science fiction section. But by "cognitive estrangement" Suvin meant seeing the world from a different or estranged perspective. Sorry for a fantasy example, but sort of like Gimli and Legolas talking in *The Lord of the Rings* about how humankind was different from the elves and dwarves, and why they would out-survive them. They could see humankind more accurately because they had distance, because they were different. It gave them perspective. One can find many examples of this in science fiction with its possible alternative histories, different universes, androids, alien societies, UFOs, etc… Science fiction allowed us to look at ourselves and our reality from an estranged or outside perspective. It helped us know ourselves and our possibilities better.

The new technological discoveries Verne wrote about gave us a different perspective on our lives and the new worlds on the horizon. Acknowledging a changing world gave us insight into our condition. Verne could get us to think out of the box without the trappings of modern science fiction that would come later. He was writing science fiction, before a definition in a literary way, hence the "scientific novel" with its interest in science rather than in "wild" fictional depictions.

But there is also a twist to appraising Verne. Many of the technological predictions and issues he wrote about, set in the future of the past, his future, could now be history. For all we know, *The Meteor Hunt, Treetop Village, Paris in the Twentieth Century*, and *For the Flag* could have already really happened. Verne was so prescient that his future musings, which are now of our past, could have transpired.

Verne has received a fair bit of attention recently. Surrounding the centennial (2005) of his death there have been new movies, biographies, and republished and posthumously published novels. There was also a film festival named in his honor.

Mostly known for movie adaptations and a few books widely read by adventure fans, Jules Verne with *The Meteor Hunt* and other newly republished books, has again gained attention for his prolific body of work. Verne is now being recognized as arguably the most successful French writer in the English language. Butcher (2006) wrote that he has outsold Shakespeare.

There is also new controversy.

Unlike during his life, Verne has now also become the interest of scholars who are rocking the boat by pointing out that his son Michel and his publishers altered his work. We apparently have been reading "frauds" and "criminally slapdash versions" of his novels. There are no longer just books by Jules Verne, there are re-edited books by "The Real Jules Verne." *The Meteor Hunt* (2006), along with *Paris in the Twentieth Century* and republished others, breaks the mold of what we are accustomed to expect from Verne, an un-crowded extraordinary voyage without a lot of romance. It is still refreshing to be able to easily follow the trajectory of his plotting, compared to dense social novels. In his new works one can still follow the intellectual challenges of the scientific enterprise. There are new inventions, explanations, and possibilities.

Despite being book-ended by rigorous literary scholarship, *The Meteor Hunt* is a charming novel which the translators have gone to great lengths to keep authentic and fun. The novel asks the question of what would happen if a golden meteor was on a collision course with the Earth. This takes place in Verne's future and our past. Another version of this tale is also told in *The Chase of the Golden Meteor*, but *The Meteor Hunt*, assert the editors, is the original. Here one will also find women characters which are often missing in Verne's other famous works. The tale reflects a bigger social context. The golden meteor on the way will flood the world's gold market (the science this time is economics) and some Americans astronomers vie to claim it or at least be recognized as the first to discover it. As usual with Verne, the satirical

sense of the novel does not interfere with the engaging scientific tale that is being told.

Verne has now changed from just a teller of children's tales to a subject of interest to literary scholars who seek to acknowledge the canonization of his influential literary works. *The Meteor Hunt* and some of the other books being published posthumously and republished will entertain, but may not, like his previous famous works, prompt one to want to study him. Part of the fun of reading Verne is that he made the intellectual challenge of science easy for all ages. His new readers may also not want to go any further, and they may not want to be part of the recent publishing controversy. Some will find the controversy tedious and boring. His son Michel, editing now more than four generations ago, seems like a villain.

The interest generated from the centennial of his death has given Verne fans the opportunity to choose from his many works, and now there is always another voyage that is available on the Internet that nobody has ever heard of before. Verne fans have been coming out of the woodwork with new titles over the last decade. You can also order the new ones from a struggling book store. Verne, though over one hundred, remains a fascinating travel companion. Happy voyages.

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INTERVIEW WITH BRUCE BALFOUR
Loren Means

LM: You've done so many things in your life...

BB: That's because I can't hold a job.

LM: What was your educational background?

BB: University of California, Santa Cruz. I ended up with my Bachelor's degree in Artificial Intelligence, which I then proceeded to use for a couple of years at NASA. Then I went more into computer game development, and away from Artificial Intelligence. I kind of worked back into it in time as computer games got more sophisticated. But I kept writing all along, pretty much since I was in high school, when I began to write. I probably wrote hundreds of short stories, of which I sold a handful. It just wasn't really my area—I guess I'm not brief enough. I'm a little bit too verbose for the short story mode. Writing is something I've done regularly since then. It became a kind of pattern for me over many years, where I'd spend, say, two years writing full time, either doing some kind of magazine articles or short fiction or whatever I could that I could sell. Then I'd go back and work in a "real world" job for a couple of years, and then just swap back and forth. As a result, I ended up meeting a lot of different people in a lot of different occupations, and it's come together over time to where I get to draw on all that background for the characters I create now in the novels I do.

We were getting AI projects at NASA because my branch chief was interested in AI, and I was the only guy around that knew anything about it at the time, with what little I knew, so he said, "Start putting this together. Start teaching some of our people how to do LISP programming, and see what we can get started with the Stanford AI Laboratory." It was kind of an interesting position, because at the time, I was thinking of going on and working on my PhD at Stanford, and NASA had a program that would allow me to do that. I could get the PhD in another three years of work, and just skip the Master's entirely. I was already starting to deal with the people who would be my professors at Stanford in a professional capacity, because I was the NASA guy that was handling the contract that we were setting up at Aames. So that was kind of fun.

As a result of one of the AI projects I was working on at NASA, I ended up doing this large report that eventually turned into a book. In the process of that, I learned more about the bureaucracy than I really wanted to. I didn't get credit for the work that I did. As a result, a couple of months after that I ended up leaving and going back to writing full-time. I eventually worked for Subaru's Advanced Vehicle Design group, and then I wrote for a couple of years, and then I worked for a variety of computer game companies, doing computer game design. I never did quite get to that PhD.

LM: You started writing short fiction, was it for the *Twilight Zone Magazine*?

BB: My first professional short fiction sales were to the *Twilight Zone Magazine*. It was quite an event for me. I think it was around 1980-81, when I got this letter back from *Twilight Zone*. Ted Klein, the Editor, had gotten familiar with me, he'd seen a lot of my short stories and rejected most of them, so I got this letter back and I was expecting the usual rejection note, and opened it up and there was this contract inside, and a little note from him saying he'd like to buy the story. So I thought, "Wow, this is really cool," it was very exciting. Then I looked at the next page, and there was another contract there, with another letter. He was actually buying two of my short stories at the same time. So those came out in 1981 and 1982 in the magazine. I was just talking recently to Jack McDevitt at a convention, and we were saying there were a lot of people that started in *Twilight Zone Magazine* at about the same time. In the same year that I started, my first professional sale, Connie Willis had her first sale in the same magazine, Dan Simmons, Jack McDevitt, and I think we came up with a couple of others, too. Nice company to be in.
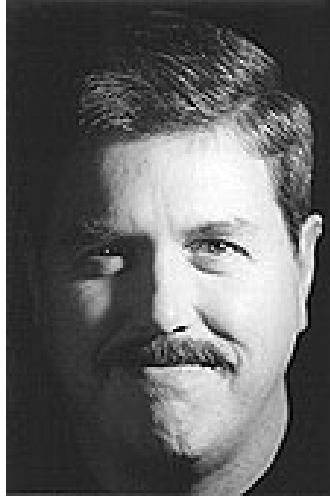
They all stayed with it, I guess, better than I did over the intervening years, and turned out a lot more work. But I was still in my cycle there. I went from UC Santa Cruz, where I was when I sold those stories, to NASA, and I continued trying to write short fiction for a while, and I kept doing magazine articles. I was writing things like for *WestWays Magazine*, the AAA magazine, on Indian ruins in the Southwest. I would go and take the photographs myself. I would travel around the Southwest and visit a lot of Anasazi ruins, and places that are hard to get to but rewarding, like Chaco Canyon, and Hovenweep in Utah.

LM: One of the first games you worked on was the "Neuromancer" game.

BB: Interplay in Southern California decided to do a game based on the book *Neuromancer*. Timothy Leary was handling the rights for William Gibson for a couple of things, for the computer game rights and for the movie rights. The game proposal that Tim Leary had submitted was not one that the game company felt that it could make. It was more of a psychological study of the main character. It didn't really have game elements to it. Tim Leary had done something called "Mind Mirror" before that, his one foray into computer gaming. But he knew people. Devo, for example, did the soundtrack for our computer game. A lot of things came up because of his connections. So then Interplay asked me about doing a game based on the book, I think it turned out reasonably well. We won some awards for it. It came out in 1989.

LM: This was written for the Atari?

BB: It came out for the IBM PC-XT, Amiga, and Commo-

dore 64, as I recall. They were going to do an Atari ST version, but I don't think they did. It was interesting, because that was still in a period where we'd moved out of text games. We were beyond wire-frame-type graphics. It had gotten a little more interesting than wire-frame. But it still looked pretty cartoony over all. So the idea was how you'd take all this great content and try not to make it cartoony with those kinds of graphics. One way to deal with that was trying to use a lot of what the characters in the book were doing, integrated into the game.

Graphic adventure games were starting to become popular. Adventure games were text adventures originally. Adventure games, with their orientation more toward the story line and characters, were something that worked really well for this type of adaptation. That was the first time there was a hybrid between two different styles, an adventure game that had elements of a role-playing game in it. While playing the main character, you could use different kinds of software to attack the "data bases" and break into different secure systems. So as part of the adventure game element, you'd go around and deal with characters, pick up inventory objects, pick up different kinds of software that you could try later on.

Then there was the cyberspace component. You've left the real world, you're in cyberspace, you're traveling around in a more free-form world, graphically represented in a wire-frame matrix with the ICE, the intrusion counter-measures surrounding the protected systems. So you try and break through the ICE with the different kinds of software that you have. Some of that involved some puzzle-solving. You'd try to use a piece of software and it would ask you to use a particular code that you would have had to have picked up somewhere else in the real world by talking to the characters. If you had both of those, then you could break into the system and find out what they had. Sometimes you would break into a secure system and find that there were messages left for you by some of the characters from the game. So you'd advance the story more that way.

It was an interesting story-telling medium, while it lasted, up until a few years ago. Adventure games did pretty well. A little bit after *Myst* was released, there became more of an emphasis on graphics and they developed more of the shooter-type games like *Doom* for the PC. Of course, now all of that has pretty much been supplanted by the computer game consoles, Play Station, Nintendo, and so on, where you can do some story stuff, but you can't always get into a character's head like you used to be able to in the adventure games.

Some of the games I worked on had the intricacy of an adventure game, with a multi-path story line, as opposed to a novel, where it's linear. You had to think through a lot of different possibilities to get to the stories overall, if they were well executed. Because of the more involved story line, and the graphics getting better as the teams got larger, these got to be very expensive games to make. Then Hollywood entered the picture, where they wanted to try to take existing movies that had been filmed one way and then they'd go to a game company and say, "Here, can you make a game out of this?" and most of the stuff that they could reshoot in video was really hard in the beginning to come up with ways of making a multi-path story, Adventure game type of thing, out of these movies.

LM: You did some interviews with science fiction writers, including Harlan Ellison?

BB: Yeah. It was probably in the mid-Eighties. Even going to his house was an interesting experience, because he lives in the Hollywood hills, up off of Mulholland Drive. A relatively normal-looking neighborhood, and so I pulled into his driveway and went to his front door. The front door was this ornately-carved wooden door that had been made by the Dillons, who had done some of his book covers, like the *DeathBird* stories. They had a very distinctive style. They had carved this door for him. So I went up to the door, and rang the bell.

He spoke to me through the intercom. I didn't know he could see me from there, but he was up in his office, and he could see the front door. It was kind of an L-shaped house, it was up over the garage. So he told me to come on in. He said, "Once you go in the front door, go through the first door you see on your right, go through that room, up the stairs, up to the loft, and that's where my office is, and I'll be waiting for you up there." So he buzzed the door open. I went inside. There was this long, dimly-lit hallway. I think at the other end there was a laundry room, and the kitchen was beyond there. I didn't see any door on the right. So I went down to the other end of the hallway, looking around, and I didn't see what he was talking about. I was feeling kind of stupid, and I turned around and went back, and there was a small door right behind the front door, on that wall where I opened the door in. It was on the other side of the door. It was this little mouse-hole-shaped door with a big silver handle on it. It looked like a little storage closet or something. So I looked around to see if anybody was looking, and peeked in there. There was a room on the other side. So I got down on my hands and knees and went through into the other room where the pool table was, and then up the stairs. He explained that he had had it made that way so that when studio executives came over, he'd get them down on their hands and knees before they came to talk to him. So that was kind of fun.

He's got all these great things around his house. He's got the Robert Silverberg Memorial Cactus Garden, that was put in by Robert Silverberg, who of course is still alive and well. He had a big gargoyle that a sculptor had built for him in metal in his back yard. I spent the afternoon up there doing the interview with him. At the time, he had finished a script for an adaptation of [Asimov's] *I, Robot* for one of the studios, so he was talking about that a lot. That, of course, didn't get made, but it sounded really good.

Another interview I did later on was with Fritz Leiber, who was living in San Francisco. I had actually been corresponding with him for a while, and I'd met him at a convention in Phoenix one year. We got along pretty well, and after that we stayed in touch. It was interesting to me the way he worked, because he wrote everything in longhand on these tablets. He didn't like to type things, so he always did his work longhand and somebody else would type it. He was an interesting character to see, too, because he was very tall, and by the time I met him, his hair was completely white and had a kind of halo affect around his head, and big square glasses, thick glasses, and then high-top tennis

shoes that he wore with a suit. An angelic tall man in a black suit.

As part of one of his explorations around San Francisco, he had for a long time been trying to get into Sutro Tower, or find out more about it, and find out how to get up to the base of it. He had been looking for years, and hiking around with friends, and hadn't quite figured out how to do it. But eventually this friend of his said she thought it was over here, they made this little hike, and ended up at the base of Sutro Tower. While they were standing outside the gate, the head engineer who worked there showed up and asked what they were doing. Leiber said that they were science writers, and they'd had this fascination with Sutro Tower all this time, and they finally found out how to get to the base of it. He said "Well, come on in." And he took them in and showed them around the little control facility at the base of the Tower, taught them about it, and then he offered to take them up in the elevator. The reason I mention all this is because, with all this detail, it was really nice to have, because I just went back to it recently, when I wrote the *Digital Dead*. So I have all this description that Fritz Leiber gave about his trip to Sutro Tower and taking the tiny little elevator to the top of the Tower, which is almost a thousand feet up. It was a long ride, it's kind of an angled elevator, it's not really a straight ride up on those legs. It goes out at an angle halfway up, then switches the angle and goes back in, makes the rest of the trip up, and then you're up on top of the masts. He had all this great description of what he'd done, and I finally got to use it recently.

The Forge of Mars original cover art

LM: You were on several science teams over the years, weren't you?

BB: The various science teams I've worked with have been really interesting people, involved in these highly specialized disciplines and very well educated, unique people, some of whom, combinations of them, have turned into characters for my books. The research environment is something that appeals to me. But like with Tau in *The Forge of Mars*, the autobiographical aspect of not really fitting in that well into the bureaucracy for a long period of time is something that wears me down over time, and I just want to go off and write some more. But, of course, writing hard science fiction you end up learning a lot of things, doing research into a lot of things that you might not have done otherwise, so it allows me to follow a lot of these interests and have a justification for doing so. With *The Forge of Mars*, I spent all that time doing research into nanotechnology, into the current state of artificial intelligence and genetic algorithms, and being able to put all that together and be relatively current on the topic. Now I work at the Lawrence Berkeley National Laboratory, and I'm into all kinds of things.

LM: You had another book after *The Forge of Mars*.

BB: That's *The Digital Dead*. It's kind of a sequel to *The Forge of Mars*. It's a little bit more cyberpunky in style. It's set in the same time period. Some of the same characters return. It's mostly based around San Francisco, and a little bit on a Navajo reservation. It deals with immortality, and being able to upload your personality and your memories onto a chip, and the implications of that technology. And, of course, what could happen to it if it falls into the wrong hands. So the conspiracies work their way back into this book also, like they did in the first book, where we've got masters of the world that are doing things behind the scenes. It's always nice to think that if we only understood a little bit more, we'd know why all these things are happening in the world. But we don't, so all of these weird things go on in the world, we don't know why, and it just seems like everybody is crazy.

Digital Dead is a little less hard science, but it's still a good strong science fiction novel. It's also written to appeal to a wider audience. The first one, being a straight hard science fiction novel–there are parts in it that are technical enough that some people run into it and just start scanning, maybe where I start talking about Hohmann transfer orbits between here and Mars–but the audience that likes SF just loves this kind of stuff, and they want you to get it right, and they want the details. So I wanted to demonstrate that I could do that. That's part of the intent of the first book, *The Forge of Mars*. That book was fairly well received, and it hit the Locus best-seller list in December 2002. It got a pretty good response, and I was pretty pleased with that. So now I'm trying to expand a bit in a slightly different direction.

My latest book, *Prometheus Road*, is not a sequel to the first two books. It's a post-big-nanotech-event-type world, where there are very sophisticated AIs, but then also the United States was devastated by a big nanotech event. So it's kind of reverted to the old ways, as far as cultural levels of civilization. The main character also has to deal a little bit more with an inner journey at the same time, so it's one of those external journey-inner journey-type books.

LM: Do you consider yourself a cyberpunk writer, or is there such a thing anymore?

BB: I don't think there is such a thing, really, anymore. It was certainly a very specific style for a while. People kept saying it was going to go away. Even when I was doing the *Neuromancer* computer game, people were saying "Cyberpunk is dead, we've moved beyond that." But it keeps coming back, in various forms. I think it's been inculcated into the society now. Most people have at least heard the term "cyberspace," which I

know William Gibson regrets ever having said. It's one of those things that's kind of become more acceptable in a wider range of readers, where they may not have read science fiction before that, but now they do, because there are things they recognize in there. There's the mechanization of society. There's the advanced computers. There's the underground element of hackers. People know about these things, so it's become a little bit more mainstream in style, doing something in a cyberpunk mode, than it used to be. But I don't think it's really called that, necessarily, any more. I'm not sure what it's called, anymore. Maybe "real life."

LM: One thing that seemed like cyberpunk to me in The *Forge of Mars* was the fact that Tau was menaced by gang members, and he menaced them back. That seemed to me to have the element of the "bad future." But it seems to me that science fiction used to see technology as evil, and now there's a more optimistic attitude toward technology in science fiction.

BB: It's one of those regular cycles that generally society will view science as either being really dangerous or as being the thing that's going to save us next. We seem to be in one of those intervening spaces right now where not everything is viewed as being really dangerous just because it's high tech, because it's part of people's lives. Most people have computers, or deal with them in some way in their jobs. Computers aren't as scary any more. If you start stretching that more and tell them "Eventually your desktop computer will be as smart as you are, or be able to learn on its own, or make its own friends, or go out and learn things for you and then bring it back, you'll have more of an automated assistant than anything else," they might look at you a little odd, but they'll at least consider it. And if you go beyond that to the ultra-intelligent machines, the computers that have designed successive generations of themselves that are way beyond what the original computers were like, then it's a little bit harder to sell to the general public, but the science fiction readership will certainly be there.

LM: So will machines write novels?

BB: In *The Digital Dead*, some highly-placed politicians in the White House use an AI that writes speeches for them. It draws on a database of successful political speeches on various topics, the ones that have gone over the best with the general public, and has basically broken them down into saying "This sound byte is the best possible thing you can say on the subject at this time." They can string them all together into really nice speeches. So if you need a speech about a particular topic, you consult the AI and say "This is the topic, this is the person who is going to be doing it, so it's going to be delivered through this personality." The AI writes the speech and the politician says what the

AI wrote. I think all that's quite reasonable. I guess the thing to worry about beyond that is if you have somebody who would deliver one of these speeches, not having read it in the first place and not knowing actually what it said, and depending on your view of politicians, it's more or less likely. Certainly with actors in office, you could see that as a possibility, where the script didn't say quite what they wanted it to say, but now they've said it, so now they actually have to make that a policy.

LM: Most of the people I know are negative about the current political situation, but I think scientists and science fiction writers tend to be more optimistic. What about you?
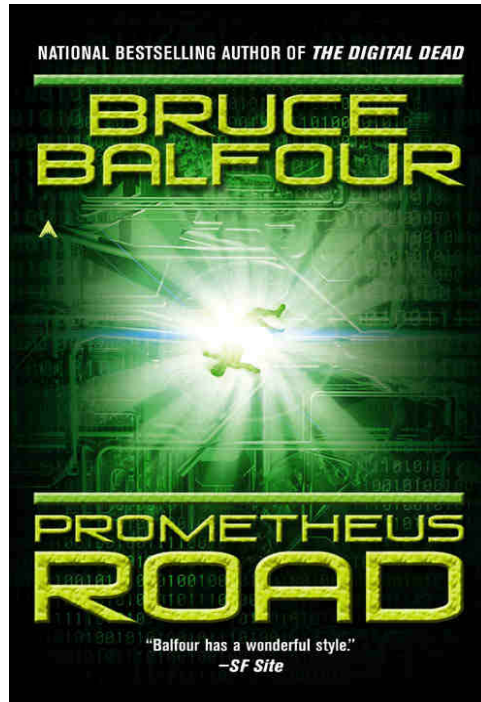
BB: I tend to be more optimistic. I think that in the case of arguments about anything, that extreme positions are noticed more than moderate positions, that the extreme positions people take in politics serve the same function over time. If you want a consensus of some kind at the end of all the arguments, it's going to end up somewhere in between the two extremes. The same is true with a lot of science topics, like, say, genetic engineering. There's the good points of it, there's the bad points of it. Certainly if you're living in one of those areas where food is scarce and your crops won't grow in your environment and you'd like to eat, you really don't care how you get food. If genetically-engineered grain is going to grow in your environment and you can eat it, then you're all for it. Hopefully there won't be side effects to that. Like with the space program, the Russians figured out that they're going to work on the international space station, and developed these modules with NASA for the Russian space agencies. So as a result, NASA also gets more money, because they're working with these guys to build these huge projects. It's interesting how these other political aspects work in where they can be obstacles or they can work to everybody's benefit. I would certainly rather have the former weapons builders either working on software or working on the space program, as opposed to working for another country and building more weapons. I think a lot of that is there in the background, the way I use it in my books. I usually introduce it in terms of conspiracy theories, but it is fun to play with, that there are these secret masters of the world, and if they like what you're doing, they'll let you do it, otherwise they won't. If you're generally beneath their notice, then everything is fine for you.

NATIONAL BESTSELLING AUTHOR OF *THE DIGITAL DEAD*

BRUCE BALFOUR

PROMETHEUS ROAD

"Balfour has a wonderful style."
—*SF Site*

INTERVIEW WITH ELIZABETH BEAR
Loren Means

LM: Do you consider your Jenny Casey trilogy to be cyberpunk?

EB: Not really. Cyberpunk, to my mind, is a very specific sub-genre of science fiction, and I'm not sure that any actual cyberpunk has been written in the last ten years or so. Although, I have not, obviously, read everything that's been written, and I may be forgetting something I have read. My trilogy is certainly post-cyberpunk, or influenced by cyberpunk, especially the first novel. It moves from exploring certain cyberpunk elements through some of the other discussions that have been going on in science fiction. I did want to write books that would be accessible to people who hadn't been reading science fiction, or reading the cutting edge of science fiction, for the last twenty or thirty years, because we have our own language. We have our own slang, and it can be very impenetrable to people coming in.

I wanted to write something that anybody could pick up and read. Anybody can pick up a Heinlein juvenile and read it, and understand what's going on. I think for many people who have not been immersed in science fiction, picking up a novel by Mark Budds, say, and opening to the first page, and you're struck by this wall of

Image by Stephen Shipman

slang. To an educated science fiction reader, who will start trying to parse out that slang, part of the game and part of the fun is the game of understanding what he's saying and getting immersed in that world. It's fun for us. For somebody else, it's "I don't understand a word of this." It's a similar reaction to what you see with Anthony Burgess' "A Clockwork Orange." Either you get immersed in the slang immediately and start playing the game that he's setting up, or you bounce off it in sheer terror.

LM: Several people have told me that they found *Neuromancer* unintelligible, and gave up on it.

EB: You have to have the background going in. You have to have the foundation, and the willingness to play word games.

LM: On the other hand, perhaps part of the appeal of *Neuromancer* to the people who like it is the necessity to stay with it, to figure out what Gibson is talking about.

EB: You've got to back-construct his language. That's part of the world-building process in the book. It's brilliant. But it's not transparent, it's not easy. Of course, Bester did that a lot, the immersive playing with language, and the language itself becomes part of the world-building and part of the narrative.

LM: There's some of that in your trilogy.

EB: A little bit. I tried to work up to it. I tried to make things as easy as possible, without doing a whole lot of exposition.

LM: It seems that your trilogy differs from cyberpunk, especially in the second novel, is that there's an outer space component, and an alien component.

EB: There are some cyberpunk elements. There's certainly a first contact story, especially in the third book. There are aspects of political thriller, and some aspects of a murder mystery. I like doing that.

LM: Do you think you're unusual in that you write in so many different genres?

EB: I don't know. It seems to be more common. But a lot of the New Wave writers were very diverse in their interests. And even today, Charlie Stross is writing in three or four different sub-genres. It's all the stuff I read. You write what you read. I read broadly, both in genre and out.

LM: When I interviewed Gregory Benford, [YLEM Journal, Vol. 25, Nos. 10 & 12] he came down hard against fantasy. He seemed to feel that fantasy wasn't serious enough.

EB: I would question what fantasy he's reading. Fantasy is the oldest human literature. It's the way in which we perceive the world. We construct patterns. There's this trope that fantasy is somehow escapist and science fiction is realist. I think that's nonsense. There is escapist science fiction, and science fiction that exists to validate the preconceptions of the reader. And there is science fiction that engages the world and is very questioning, and forces you to think in interesting and complicated ways. And there is escapist fantasy, certainly. And there is fantasy which very profoundly engages the world, and asks very real questions, and asks very difficult questions. I like to think that some of what I'm writing does that.

When I say "the oldest human literature," I mean *Gilgamesh*. And a subset of fantasy becomes fantasy in which we have a world in which the rules can be anything that the writer says they are, either mythic or rigorously set out, or fairly tale, or magic realism, or surrealist, in which fantastical things can happen with or without explanations, depending on how the tropes are used. Then you have science fiction as a subset of fantasy, in which the tropes of science as we know them or the world as we know it, form a foundation. There are certain godfathered-in exceptions, like time travel, and faster than light, and in some cases, telepathy. Then you have the rigorous hard science, wherein still you get certain tropes.
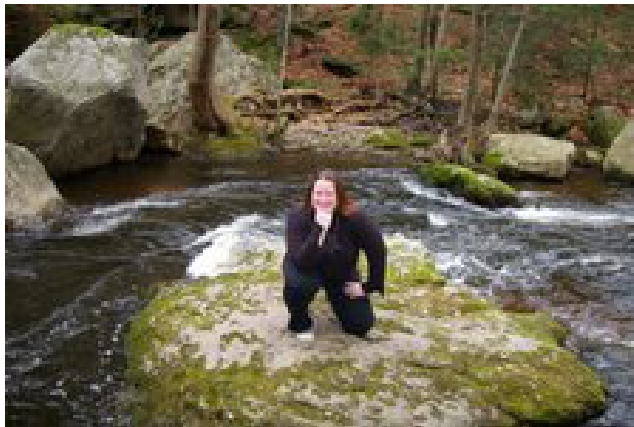
And then another small box is mimetic fiction, in which the world is exactly as we know it except, to pick an example not exactly at random, there's a hotel in New Hampshire in which there's a person who walks around in a bear suit. You invent a house on a street. You invent a town. You're altering reality, but you're doing it in a specific set of ways that are allowed within the tropes of that type of literature. I'm thinking of *The Hotel New Hampshire* by John Irving.

LM: I think Benford's point of view is that technology is the most important thing going, and science fiction is about technology, and fantasy isn't.

EB: Technology has been with us for a long time. Technology has been with us since we started banging rocks together. Neophilia is all very well and good. We need neophiles. We need early adopters. We also need to understand human society and the human psyche, and tell stories that relate to our society today. I love technology. I love modern dentistry and anesthesia and antibiotics, and being able to talk to my friends in Japan and Cambodia, and other kinds of places instantaneously. It's fantastic. Having all the information that I need at the tip of my fingers. Never having again to spend five days trying to remember what song a snatch of lyric goes to. I love that. It is incredibly

2004] gave a speech where he said that in fantasy what you see is what you get, and it isn't metaphorical, it's actual.

EB: I disagree with that. Absolutely. You can't not talk about your own society. It's all about recognizing your own bias. We all tend to project ourselves into the work and project ourselves into other people's work. We all want to establish that our viewpoint is the valid one, and of course one of the things anthropology is about is telling us that that's not so. Your viewpoint is not more valid than anybody else's.

LM: Perhaps hard science fiction also works with magic, but the magic is pseudo-scientific, like faster-than-light travel.

EB: The hardest of hard science fiction operates under rules of the world as we know it, with certain extrapolations that may or may not be correct, but are, to the best of the author's knowledge, at the time of writing, correct. When I say really hard science fiction, I'm talking about Peter Watts and Robert Forward, where you take some weird cool thing that the world does and you extrapolate it.

LM: Is that what you're doing in your *WorldWired* trilogy?
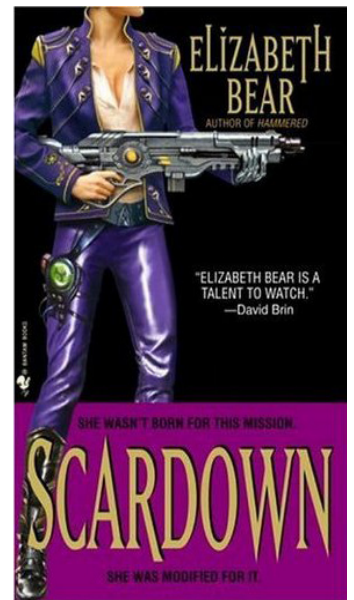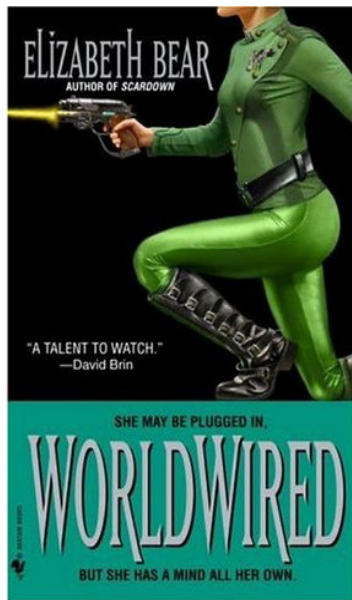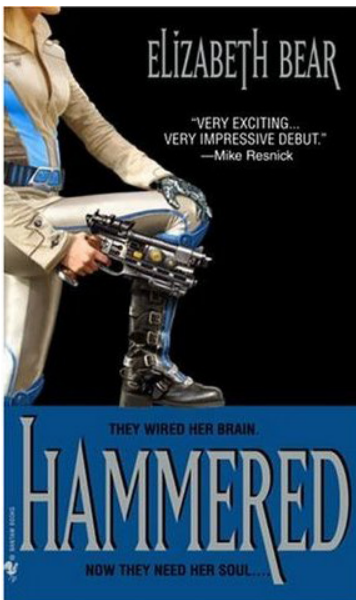
useful, and it is incredibly interconnected, but it's still about the people.

When you say "Fantasy is just about swords and dragons," you're certainly not reading the fantasy that I'm reading, which can be very psychologically revealing and sometimes very difficult to read, and having a lot of commentary on society and class and social consciousness. Actually, a lot of the fantasy I'm reading lately has discussion of economics in it. China Mieville, Charlie Stross, Sarah Monette, are all very interested in class structures. Steve Brust is very interested in class structures, and how societies work. I think whatever metaphors you set up to talk about that, as long as you're doing an honest job, are valid.

LM: John Clute [Journal of the Fantastic in the Arts, Fall

EB: No. Absolutely not. First of all, I don't have the scientific background for it, and second of all, I like reading it, but it doesn't interest me to write that. I'm not a problem-solving writer. I'm an exploratory writer.

LM: Do you read science magazines?

EB: I read popular science magazines. I read *New Scientist* and *Scientific American* and *Discover*, and keep up with a bunch of stuff online. Scientific American has a lot of very interesting stuff in it, but sometimes the editorial style loses me in the middle paragraphs. It's got pretty pictures, though. There's definitely stuff in the Jenny books that I got the idea for from *Scientific American*. They had a big thing on Artificial Life a few years back, which influenced a lot of the writing I did in there, and the way the artificial intelligence is developed.

LM: It seems like you're really hot right how.

EB: From the inside, what you're worrying about is 'Are they going to pick up my next book?' Or "Is this going to get a good review, is this going to get a bad review? Is it going to sell enough copies that it's going to go into mass market? Is it going to sell enough copies that they're going to pick up the third book in the series?' And you start thinking about, 'If I take this risk in this novel, is it going to alienate my fan base?' But you do it anyway, or you're dishonest as an artist.

LM: At a lot of panels, I got the impression that talking about the Technological Singularity is like the latest genre.

EB: It's kind of played, actually. I think we may have run out of Singularity books. I've run out of interesting things to say about the Singularity. But I'm anti-Singularity. I'm the Singularity conscientious objector. Cory Doctorow said something really fascinating about the Singularity. He was talking about how the Singularity could be seen as the Alpha-geeks going, "If we are afraid of the future, then everybody must be terrified of the future. And, of course, it must be something unknowable and impossible to comprehend. 'Apres moi, le deluge,'" I figure it's the Singularity or the Rapture. You've got two competing theories. I figure if it happens, it happens, and I'm probably not going, either way.

LM: Jaron Lanier says that while the hardware will continue to appreciate exponentially, the software won't, so we don't have to be afraid of robots taking over the world, because Windows will crash and they won't be able to reboot.

EB: There is the issue of robustness of mature technology. Like we say a book is a mature technology. It is optimized. Biology or ecology is kind of a mature technology. The human body, the human species, is a pretty durable life form, even though we're pink and soft and squishy and easy to break, and good to eat. We've managed to expand to fill any number of ecological niches and invent a few new ones. I can't get too het up about it.

LM: So you think as a genre, it's not going to attract a lot of people to it?

EB: I think it has attracted a lot. There's been very interesting work done. I just don't really have anything to say about it. There's some Singularity stuff in *WorldWired*, and there's some in *Carnival*. And in some ways, *Undertow* is a post-Singularity society. But they haven't managed to create an artificial intelligence. There's an issue right there. It is perfectly possible that an AI will appear spontaneously tomorrow. On the other hand, strong AI has been ten years on the future for the last fifty years, and we don't' have one yet. Two hundred and fifty years down the line, who's to say that's going to have changed.

LM: So what does your post-Singularity society consist of?

EB: They have an immersive virtual reality and communications technology. There's a very, very wired society. But they're still stuck in the meat. Science fiction tends to get really interested in whatever is going to be the big field in the next ten years. Like in the 1950s, they were all writing about space flight. In the 1980s they were all writing about the Internet and computers. Right now we're all writing about virtual reality, or we were. There's still a lot of VR stuff that gets subsumed into the Singularity stuff, and biotechnology, and the ecology. There's a lot of ecological disaster portentousness going. But I'm not a futurist, I'm a social critic.

LM: William Gibson seems to think that Bruce Sterling is the one who is qualified to speculate about the future.

EB: Sterling is definitely a futurist. That's his schtick.

LM: Whereas Gibson seems to be more interested in critiquing the present scene.

EB: That's exactly where I place myself. Which may be why I'm as comfortable writing fantasy as science fiction, because I use them to do the same things. I use them to alienate and subvert.

LM: I gather you don't think ecological disaster is right around the corner.

EB: I think ecological disaster is happening right now, but I don't think the planet gives a shit. I think that the human suffering and the toll on the larger vertebrates will be enormous if we don't get our act together, but on a non-human-centric scale, I don't think it matters, because it's not as if we're the first dominant species this planet has ever seen. If we do, in fact, wipe ourselves out or knock ourselves back to the Stone Age, something else will come along. We're not the center of the universe, we're only the center of our universe, which is why I think we had better wise up. With the objective, scientific part of my brain turned off, I kind of like modern society and people. I'm pro-human race. You know how you're mom says 'the only one you're hurting is yourself?" That's where I stand on that issue.

LM: Are you going to keep writing both hard science fiction and fantasy?

EB: I'm going to keep writing science fiction and fantasy as long as they'll pay me to write both, because I love them both.

LM: The Jenny Casey novels have two strong female protagonists.

EB: I also write male protagonists. I do consider myself a feminist, but gender roles are not the only thing I write about. However, I do write about them. Carnival is in a lot of ways about gender roles, although it's got two male protagonists. The primary protagonist is male, and of the secondary protagonists, one is male and one is female. I write the characters who show up. Little bits of my subconscious fragment themselves off and develop personalities and physical tics and speech patterns. Then I write about them.

LM: Do you think it's advantageous to have come along

when you have, as a female writer?

EB: I think it's certainly easier for me to be taken seriously as a science fiction now than it would have been forty years ago. But there are a lot of excellent, excellent, well-established women writers right now. C. J. Cherryh, and Lois McMaster Bujold, and Ursula Le Guin. Fantastic writers. Definitely some of the best in the genre. I have only very rarely felt discriminated against in any way, and that was always by individuals, never by institutions. But most of the editors in the genre are female. Most readers nationwide are women. There's a reason why romance is fifty-five percent of the entire market. When you look at science fiction and fantasy, we've got our little six percent of the sales.

Image by Stephen Shipman

LM: Do you think the reason why fantasy is now selling better than science fiction is because of women readers?

EB: I suspect it probably is. Science fiction tends to be a boys' enclave. But it's time to stop being shrill and start being smug, because we women are here.

LM: It seems to me that academics have tended to oppose machinery and technology, while scientists say that technology will save us. It's quite a dichotomy.

EB: I think it's a false dichotomy. This is actually part of what *Blood and Iron* is about, this Apollonian/Dionysian dichotomy, which is inherently false. This dates back to the Romantics, because if you go back a little bit further, art and science are the same thing. They're fields of human endeavor and fields of human knowledge. In my experience, the more you know about something, the more it increases your wonder, and the more it increases your emotional connection with that topic, which I think is one of the things that gets denied by scientists. Because scientists are very, very passionate about their work, but they're trained not to admit it. If you want to see an example of passion, listen to Feynman's lectures. There is somebody who is so obsessed with his topic, so into his topic, it's fantastic. There's a reason why the Merlin the Magician in *Blood and Iron* is a geology professor. Why she is a scientist. Because I think we sort of cripple ourselves when we don't recognize that these are not disparate fields of human endeavor. Back to that fantasy versus science fiction thing. I'm passionate but uncommitted.

Jules Verne and Beyond, continued

Chinese with the Western art of memory," teaching them to equate certain types of memories with specific ideograms. And he goes on to posit another duality, this one without any outside references to bolster it: "Cyberspace, from the beginning, was made possible through the transcultural clash between Western mnemonics and Chinese ideograms, that is, between the iconographic imagination and the ideographic imagination." Heady stuff, but Tatsumi's principle argument in his article is that the film is even more relevant now that it was when it came out in 1968. He closes his essay by invoking a Chinese-American science fiction writer, Ted Chiang, who writes of artificial life manifested lexically. Tatsumi has a vivid and sometimes outrageous imagination, combined with far-ranging scholarship, and his article is fascinating and apt.

Another contemporary commentator whose work I follow eagerly is N. Katherine Hayles, best known as author of *How We Became Post-Human* (1999). Hayles uses Neal Stephenson's science fiction novel *The Diamond Age* to explore the topic "Is Utopia Obsolete?" Hayles postulates a duality between freedom of imagination on one hand and the rule of law on the other, suggesting that Postmodern life is too complex for utopia to come into being. Stephenson's novel imagines nanoagents that circulate between humans, undermining the concept of individual autonomy. The interactive multimedia "Primer" of the novel is intended to motivate children to think for themselves, trusting that they will come to favor Victorian value systems.

In her analysis of Stephenson's novel, Hayles seems to be skirting the paradox that technology can't be an instrument in the creation of utopia because technology is inherently a tool of capital. One of the fundamental tenets of cyberpunk is William Gibson's assertion that "the street has its uses for things," postulating a conception of technology co-opted by the masses. But, as Gibson's novels bear out, the closest his characters get to positive experiences entails associating on favorable terms with unscrupulous capitalists. The most influential science fiction mavens, like Richard K. Morgan, believe that the way to succeed in our contemporary world is to understand market forces well enough to beat the capitalists at their own game. And this is a game for individuals, not collectives. We are brought back to the question of whether utopia consists of the subsuming of the individual into a kind of mass consciousness (for instance, a noosphere), or rather does utopia consist of an opportunity for the mutual flowering of individual consciousness of a higher order than previously imagined. After spending most of her essay recounting plot points from Stephenson's novel, (finding the book, I assume, less tedious than I did, with its constant arch parodies of Victorian children's literature), Hayles lands on an optimistic note, suggesting that the interconnectedness created by instantaneous communication can break out of the contradictions inherent in previous conceptions of utopia.

There are lots more provocative articles in *World Weavers*, and I recommend it highly.

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YLEM
JOURNAL

artists using science and technology

ylem [pronounced eye-lem]
-noun

1. Greek: for the exploding mass from which the universe emerged; the material of the universe prior to creation.

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